

REMARKS/ARGUMENTS

Claims 26, 34-39 and 44-48 are active. Claims 32, 33, 41-43 and 49 have been withdrawn from consideration. Claims 26 and 39 have been amended to include the limitations from Claims 27 and 40, which have been cancelled. The limitations in Claims 27 and 40 are also disclosed in the specification on page 3, lines 14-20. No new matter has been added.

Restriction/Election

The Applicants previously elected Species II, directed to an electronic device having a condensable fluid as shown in Figure 4. All the claims refer to an electronic device having a condensable fluid, therefore, the Applicants respectfully request the rejoinder and examination of these claims. Alternatively, in the event that the election/restriction requirement is maintained, the Applicants respectfully request that the claims of the nonelected group(s) which depend from or otherwise include all the limitations of an allowed elected claim, be rejoined upon an indication of allowability for the elected claim, see MPEP 821.04.

Rejection - 35 U.S.C. § 103(a)

Claim 26, 27, 34, 39, 40 and 44 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ueki et al., U.S. Patent No. 6,317,322, in view of Fredberg, U.S. Patent No. 4,029,628.

Ueki uses grease between the electronic part and the heat spreader and does not disclose or suggest bonding or integrally joining the die or electronic part to the heat spreader so that thermal stress that causes separation of the die or electronic part and the heat spreader does not occur as required by the independent claims. The parts of the device disclosed by

Fig. 9 of Ueki are not bonded or integrally joined at all. According, to col. 2, lines 54-*et seq.* these parts are merely contacted and heat transfer grease is applied between them. Ueki discloses the need to have “highly preciseness in size” (line 55) and “flatness of the contact surface” (lines 61-62) to accomplish this objective. Thus, Ueki does not disclose all the elements of the present invention, specifically the requirement for bonding or integrally joining the electronic part and the heat spreader, and cannot provide a reasonable expectation of success for the present invention which bonds or integrally joins these elements in a way to minimize thermal stress and prevent their separation.

Fredberg discloses bonding integrated circuits to heat sinks using a thermoplastic adhesive resin (col. 1, line 42). This resin is “the consistency of a putty when cooled” (col. 2, line 3) and contains a filler to increase its thermal conductivity (col. 2, line 5).

Based on the putty like consistency of the thermoplastic resin of Fredberg, the Applicants submit that it does not bond or integrally join the electronic part and the heat sink, since “the device is easily removed from the adhesive” (col. 3, line 2).

Assuming, *arguendo*, that the terms “bonding” and “integrally joining” are construed as encompassing adhering an electronic part and heat sink using the putty-like resin of Fredberg, the cited prior art does not suggest selecting an electronic part and heat sink having coefficients of thermal expansion so close so as to not generate significant thermal stress.

On the other hand, the present invention overcomes the problem of electronic component separation caused by thermal stress as described in the specification on page 2, lines 19-24. The present invention overcomes this problem by bonding or integrally joining the electronic part (or die) and heat spreader (page 2, lines 25-26) in a way that minimizes thermal stress so that the separation of the electronic parts does not occur.

The Official Action, page 6, section 6 “Response to Arguments”, suggests that the coefficients of thermal expansion for the electronic part (52) and heat sink (50) in Fig. 9 of

Ueki inherently are “about” the same. However, no technical rationale for this assumption is provided. Moreover, this assumption does not appear reasonable, since Ueki, col. 2 suggests that the heat pipe may be made of a wide variety of different materials, including aluminum, copper or stainless steel (col.2, line 23) and Ueki does not suggest selecting a heat pipe material selected to approximate the coefficient of thermal expansion of the electronic part.

The Applicants understand that the Examiner is obligated to construe claim terms like “about” broadly, however, as used in the present claims, the term “about” is not indefinitely broad, because it functionally describes materials having thermal coefficients of expansion close enough that do not generate thermal stress sufficient to separate these parts.

In view of the above, one with ordinary skill in the art would not have been motivated to make the present invention based on Ueki, nor on Fredberg, because these documents provide no suggestion for selection of an electronic part and heat sink having about the same coefficients of thermal expansion. Accordingly, the Applicants respectfully request that this rejection be withdrawn.

Rejection - 35 U.S.C. § 103(a)

Claims 35-38 and 45-48 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ueki et al., U.S. Patent No. 6,317,322. Ueki does not disclose or suggest the invention as claimed by independent Claims 26 and 39 for the reasons discussed above.

Claims 35-38 and 45-48 depend from Claim 26 or 39. Therefore, these claims are not obvious over Ueki (or Ueki in view of Fredberg) for the reasons discussed above.

The Applicants appreciate that the Examiner would like simplify prosecution by taking Official Notice of well-known prior art. However, the Applicants have made no admission with respect to what is well-known prior art and would prefer that the record clearly cite such art. A patent applicant’s silence during prosecution is not construed as

acquiescence to statements made by the Examiner, see Salazar v. Procter & Gamble Co., 75 USPQ2d 1369 (CA FC 2005). Nevertheless, these issues are moot in view of the remarks above.

CONCLUSION

In view of the above amendments and remarks, the Applicants respectfully submit that this application is now in condition for allowance. Early notification to that effect is respectfully requested.


Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon

Customer Number

22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)


Thomas M. Cunningham
Attorney of Record
Registration No. 45,394